Geologic Map of the White Tank Mountains, Central Arizona

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Bedrock mapping by S. J. Reynolds and S. E. Wood (Arizona State University)


Derived from digital database compiled by Steven E. Wood

Cartography by Steven E. Wood, Stephen M. Richard, and Stephen J. Reynolds

The White Tank Mountains are a small Tertiary metamorphic core complex located 90 miles west of Phoenix. The complex consists of Proterozoic metamorphic and plutonic rocks, late Cretaceous to early Tertiary plutons, and locally Mesozoic to early Tertiary volcanic rocks and sediments. The core complex is bounded to the north by a prominent fault and intrusive contact with younger granodiorite plutons to the southeast. The core complex is bounded to the south by a major fault that offsets the northern boundary of the core complex to the south. The core complex is bounded to the west by a major fault that offsets the northern boundary of the core complex to the west. The core complex is bounded to the east by a major fault that offsets the northern boundary of the core complex to the east. The core complex is bounded to the north by a prominent fault and intrusive contact with younger granodiorite plutons to the southeast. The core complex is bounded to the south by a major fault that offsets the northern boundary of the core complex to the south. The core complex is bounded to the west by a major fault that offsets the northern boundary of the core complex to the west. The core complex is bounded to the east by a major fault that offsets the northern boundary of the core complex to the east.

Bedrock geology of the core complex is composed of both volcanic and plutonic rocks. The volcanic rocks are mainly andesitic-dacitic composition and are locally overlain by younger granodiorite plutons. The plutonic rocks are mainly granodiorite and gabbro composition and are locally overlain by younger granodiorite plutons. The volcanic rocks are mainly andesitic-dacitic composition and are locally overlain by younger granodiorite plutons. The plutonic rocks are mainly granodiorite and gabbro composition and are locally overlain by younger granodiorite plutons.

Map Units

Q

Quartzite, granite, gneiss, and schist.

Qo

Quartzite, granite, gneiss, and schist.

Qg

Quartzite, granite, gneiss, and schist.

Qm

Quartzite, granite, gneiss, and schist.

Qd

Quartzite, granite, gneiss, and schist.

Qt

Quartzite, granite, gneiss, and schist.

G

Gneiss, granite, gneiss, and schist.

Gd

Gneiss, granite, gneiss, and schist.

Gt

Gneiss, granite, gneiss, and schist.

T

Tonalite, gneiss, and schist.

X

Anhydrite, halite, and tuff.

Symbols

Depositional or intrusive contact

Fault

Depositional Fault (concluded)

Miocene/Tertiary fault with breccia

Dikes

Meso-Neogene dike (Tertiary)

Middle Miocene dike (Tertiary)

Cretaceous-Tertiary dike (Tertiary)

Mesozoic dike (Tertiary)

White Tank Granitic dike (Tertiary)

Line of geologic sections (see page 2)

Contour Interval 20' south of 33° 30' and north of 33° 30' 30" and 40' elsewhere.

DSS map from White Tank Mountains, White Tank Mountains NN, and Valencia 7.5' Quadrangles (USGS DRS files).